NSF EVALUATION AND ASSESSMENT CAPABILITY $8,860,000
+$3,360,000 / 61.1%

Overview
The objective of this initiative is to provide NSF with the capacity to operate from a basis of evidence in policy decisions. The Evaluation and Assessment Capability (EAC) will provide centralized support and resources for data collection, analytics, and the design of evaluation studies and surveys. These activities will enable NSF to more consistently evaluate the impacts of its investments, to make more data-driven decisions, and to establish a culture of evidence-based planning and policy-making.

Goals
The leadership, expertise, and resources of EAC will enable the accomplishment of the following multi-year goals:

Goal 1. Encourage a culture of evidence-based planning and policy making that routinely articulates program goals, milestones, and metrics.

Goal 2. Enable consistent evaluation of the impact of NSF investments with a high degree of rigor and independence.

Goal 3. Develop and implement a coordinated framework for evaluating NSF-wide investments that is consistent with agency strategic and performance plans.

Goal 4. Increase access to program-level post-award outcome data to support decision making and evaluation designs through stronger data analytics, business intelligence, and visualization tools.

Approach
Over the FY 2014 - FY 2018 period, NSF will establish mechanisms for Foundation-wide leadership and coordination in program evaluation; provide expert support and resources for data collection, integration, and management; and improve directorate/office evaluation capacity. A leader of the EAC, as well as additional staff, will be in place in FY 2015.

Investment Framework

Evaluation and Assessment Capability Funding

(Dollars in Millions)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Request
$0.80	**$5.50**	**$8.86**

FY 2014 – FY 2015
Specific Investment 1: Investments in communications, training, and portfolio analysis tool development to support rigorous evaluation planning, portfolio analysis, and the use of evidence and data for programmatic decision making are planned.

- In FY 2014, an NSF-wide Portfolio Analysis Taskforce was convened with different areas of relevant expertise across the foundation being represented. A needs assessment survey was conducted and NSF-wide portfolio analysis needs were identified.
- In FY 2015, the report from the Portfolio Analysis Taskforce will be discussed and relevant recommendations will form the basis for the portfolio analysis tools system requirements.

Specific Investment 2: The EAC will conduct high-impact evaluations for cross-cutting high visibility programs, and programs whose strategic reviews have revealed a need for rigorous evaluation. The EAC will also coordinate with the National Center for Science and Engineering Statistics (NCSES) on the design of data collection instruments and methodological considerations for longitudinal data collections.

- In FY 2014, a report from the NSF Innovation Corps (I-Corps™) feasibility study was received. This report informed leadership of the additional data collection necessary to rigorously evaluate the impact of the program. The EAC initiated the following program evaluation efforts: program evaluations for Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) and Science Engineering, and Education for Sustainability (SEES).
- In FY 2015, progress reports from SEES evaluation and final actionable report for INSPIRE are expected. Based on the FY 2014 feasibility study for I-Corps™, a longitudinal data collection and formal evaluation study will be launched to evaluate the impact of the I-Corps™ program. A longitudinal data collection for the Graduate Research Fellowship Program (GRF) will be initiated.

Specific Investment 3: The EAC will develop and implement a coordinated evaluation framework.

- In FY 2014, the EAC identified consultants for a workshop to explore the frontier in evaluation of research investments to inform a framework that establishes levels of evidence and rigor for different types of programs, including basic research programs. The EAC piloted a peer review mechanism for statements of work and evaluation designs against evaluation quality principles.
- In FY 2015, in consultation with advisory groups, the EAC will begin to define NSF's evaluation and assessment quality principles and an evaluation policy for the agency.

FY 2016 Request

- Building on the prior year Specific Investment 1 activities, the EAC will finalize system requirements and begin development of a portfolio analysis tools system.
- Specific Investment 2 will continue through the following activities:
  - The EAC will implement a system to monitor GRF fellows on a longitudinal basis over their careers based on the lessons learned during the FY 2014 – FY 2015 pilot study.
  - A cross-cutting evaluation will be initiated for NSF investments in broadening participation on the following populations:
    - underrepresented undergraduate and graduate students,
    - underrepresented faculty in STEM departments,
    - underrepresented principal investigators submitting proposals worthy of support, and
    - underrepresented institutions.

    The evaluation design will use a mixed methods approach (qualitative and quantitative) to do a formative assessment of what mechanisms work best and a summative evaluation of the impact of NSF's historic investments in broadening participation.
- The impact achieved by different funding mechanisms used to identify and fund interdisciplinary and potentially transformative research (IDR and PTR) at NSF, including core programs, will be evaluated.
- The quality of the proposal responses to the revised elements of the broader impacts criterion and the actual consecution of those funded activities will be assessed.
- The EAC will develop a study to explore the cumulative longitudinal impact of NSF funding on individuals, (their career paths, creative ability, mentoring of students, networks, and other spillover effects such as single investigators, Research Experiences for Undergraduates (REUs), fellows, etc.).
- The EAC will initiate planning for the formative and summative evaluation of NSF strategic investments associated with NSF priority research areas (e.g. Innovations at the Nexus of Food, Energy, and Water Systems, Understanding the Brain)

- Under Specific Investment 3, the EAC will convene a workshop with methodological leaders from other disciplines (econometrics, for example) to explore the adaptation of methods used in other realms to the evaluation of fundamental or basic scientific research, building on what we have learned about evaluating these types of programs and further defining assessment quality principles and an evaluation policy for the agency.

FY 2017 – FY 2018

In FY 2017 and FY 2018 investments in the three specific areas will continue. The EAC will finalize the development of a portfolio analysis system and start using the tools consistently. Evaluation studies will be initiated for broadening participation, interdisciplinary research programs, large facilities, and broader impacts and their cumulative impact on people. The EAC staff, the EAC working group, and the EAC steering committee will attend a focused discussion/retreat to get expert advice on methodological issues encountered evaluating science investment programs that could be solved by extrapolating from other disciplines. A formative review of the Evaluation Framework will be scheduled based on the quality of evaluation reports and usefulness of the findings.